

## Promoting Mathematics Students' Learning Outcome Using Jarimatika Method For Primary School

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### Abstract

This study aims to implementation jarimatika method to promote students' mathematics learning outcome for elementary school. This study was conducted in class third elementary schools. Design of this research was classroom action research. Based on the results of mathematics learning students obtained data on the initial score taken from the scores of the first semester Mathematics exam students before the application of the Jarimatikaini method was 59.62 then the cycle I daily test increased by 13.63 to 73.42 with an increase percentage of 22.80%. It can be concluded that the application of the Jarimatika method can improve the results of third grade elementary school mathematics learning.

**Keywords:** *Jarimatika Method, Mathematics' Learning Outcome*

### 1. INTRODUCTION

Mathematics is one of the subjects taught starting from elementary school to university. This shows how important the role of Mathematics is in the world of education and technological development today. In life, there are very many human activities that utilize Mathematics, both in the form of using basic ideas, concepts or applications. Students learn a Mathematics material starting with an understanding of the material, so that what students learn can be applied to solve problems in everyday life. In addition, Mathematics is currently taught to meet the needs of industry, science, trade, technology, and almost all daily needs.

Given the large role and demands for mastering Mathematics,

the need for success in mastering Mathematics. Success in learning mathematics can be measured by the success of students participating in the lesson. The success can be seen from the level of understanding, mastery of the material and student learning outcomes. The higher the understanding and mastery of the material and learning outcomes, the higher the level of learning success. However, in reality there are still many students' mathematics learning outcomes who have not reached the Minimum Completeness Criteria that has been determined by each school. According to Guslindan and Gustimal Witri, 2018: 4) explains that learning outcomes are changes in behavior that occur after following the teaching and

learning process in accordance with the goals of education.

Based on the results of interviews and observations made in one of the elementary schools, many students argue that Mathematics lessons are difficult to learn one of them in multiplication material because they have to memorize.

The causes of low student learning outcomes are caused by several factors including: 1) there are still many students who have not memorized multiplication; 2) many students do not understand the concept of mathematical multiplication described by the teacher; 3) the learning method applied by the teacher does not vary. This is because the multiplication material is heavy to be understood by students so that a series of efforts are needed to improve the student learning process. In addition, mathematics is less understandable by hearing or seeing what is written by the teacher. Mathematics Learning at the Elementary School level requires more specific strategies, methods or approaches, especially those who are still in the low class.

The teacher realizes that in teaching Mathematics a learning method is needed. A method can help students understand a concept, given the level of thinking students are still concrete. But what method is used is still a problem for most teachers.

One of the most rapid and accurate multiplication methods that is most rapidly developing and in great demand by many people is the Jarimatika method. For this reason researchers in this case use an easy learning method and all can use it

without having to pay a fee. With this multiplication with Jarimatika learning will become easier. Calculations with Jarimatika can be used to improve student learning outcomes. Among the several advantages in the application of Jarimatika include: quick calculation results, the real results can immediately be seen on our side, not much memorizing formulas, encouraging children when used.

This study aims to implementation jarimatika method to promote students' mathematics learning outcome for elementary school.

## 2. METHOD

This study was conducted in class third elementary schools. Design of this research was classroom action research.

There are also stages that are passed in classroom action research namely planning, implementing, observing, and reflecting. In the classroom action planning stage, the activities will be carried out to improve, improve or change behavior and attitudes as solutions. This planning begins with setting the class as a place of research. Set learning device schedules starting with Syllabus, lesson plan, Student Worksheets, Teacher observation sheets, and Student observation sheets.

At the implementation stage the action is the application of the planning that has been constructed. The implementation of the action was carried out using the Jarimatika method in accordance with the lesson plan that

had been made in the multiplication material.

The time of observation was carried out simultaneously with the implementation of the action by involving an observer who used observation sheets. The observer aims to help the teacher reflection learning activity.

In the reflection phase of the data collected through the observation sheet, a reflection of the learning activities managed by the researcher was carried out. Through that reflection, the author and teacher who teach each other exchange ideas (discuss) to make the next learning improvement plan. Weaknesses and shortcomings of corrected actions in subsequent designs. Then discuss the advantages and disadvantages of teaching and learning.

Research subjects were third grade elementary school students with 19 students, 9 boys and 10 girls.

The data and instrument of this research consist of learning tools and data collection instruments. The learning tools used are syllabus, lesson plan, and student worksheet. The syllabus is a learning plan for a particular subject that includes competency standards, basic competencies, subject matter / learning, learning activities, and indicators of achievement of competencies for assessment. A lesson plan is a planning program that is structured as a guide to the implementation of learning for each learning process activity. Student Worksheets are one of the means that teachers can use in learning activities according to the curriculum's

requirements to optimize the achievement of learning goals (Ritonga, 2018).

The data collection instrument of this study consisted of observation, tests and documentation. Observation sheets are filled by observers when making observations on teacher activities and student activities during the learning process. This observer sheet is used to see the implementation of the Jarimatika method in learning. The test is carried out through taking scores from daily tests after learning is done. This assessment is done to measure student learning outcomes after carrying out learning with the Jarimatika method. The questions given to students are validated items. The questions to be validated were tested on 30 respondents with a total of 30 questions, then validated through the Anates V4 softfile. The researcher will do documentation when observing the teacher who is doing the learning process. In addition, researchers will also document written data such as the drafted lesson plan. The tools that will be used by researchers are a set of stationery and digital cameras. Documentation is used for appraisal evidence such as photos demonstrating the Jarimatika method.

Data processing analysis techniques in this study were carried out using descriptive analysis techniques. Learning is said to be successful if the teacher and student activities take place according to the learning scenario

**a. Analysis of teacher and student activity data**

Analysis of teacher and student activity data is the result of observation during the learning process by looking at the fit between planning and action. Analysis of teacher and student activity data during teaching and learning activities can be determined by the formula:

$$NR = \frac{JS}{SM} \times 100\%$$

(Suharsimi Arikunto, dkk, 2011)

Note:

NR : percentage teacher or student activities

JS : The amount of activity performed

SM : Maximum scores obtained from teacher / student activity

No	Categories	Learning activities
1	Very good	85% – 100%
2	Good	70% – 84,5%
3	Good enough	55% – 69,9%
4	Enough	40% – 54,9%
5	Poor	0% – 39,9%

**b. Maximum scores Students' Learning Outcome**

Based on the achievement of minimum learning mastery standard established by the school, in this study students are said to be through when it gets a minimum score  $\geq 75$ . Achievement of student learning outcomes can be determined in the following way:

$$S = \frac{R}{N} \times 100 \quad (\text{Ngalim Purwanto, 2009})$$

Note:

S = Expected value

R = Scores obtained by students

N = Maximum score

**c. Improved Learning Outcomes**

To know the improvement of student learning result each cycle can be calculated by using formula:

$$P = \frac{\text{Posrate} - \text{baserate}}{\text{Baserate}} \times 100\%$$

(Zainal Aqib, 2008)

Keterangan :

P : Improving percentage

Posrate : The score after the action is given

Baserate : The score before the action is given

**3. RESULT AND DISCUSSION**

At the planning stage, researchers have designed learning tools and data collection instruments. Learning devices consist of syllabus, lesson plan for two meetings, Student Worksheets, Evaluation sheets for two meetings, Teacher Observation Sheets for two meetings, Student Observation Sheets for two meetings, repetition questions. cycle I daily, and cycle I daily test questions and cycle I daily test replies.

The implementation of the learning process in this study uses two cycles consisting of 6 times with four times of the action and test tests at the end of each cycle.

Observations on actions taken together during the learning process. Observations were made by observing the observation sheet of teacher activities by using observation sheets of teacher activities and observing student activities using observation sheets of student activities. Aim to find out what things will be corrected in action in the next cycle

Reflection on this action sees, examines, considers the results and effects of action. Weakness and lack of corrective action in the next plan

Based on the analysis of the teacher in the learning process by applying the Jarimatika method as a whole it always experiences an increase in each cycle. In the first cycle of the first meeting the percentage was 70.00% with good category and at the second meeting of cycle I the percentage was 75.00% with good categories. In the first cycle of the first meeting the percentage was 85.00% with a very good category. And at the second meeting of cycle II the percentage was 90.00% with a very good category.

Data about student activities during the learning process clearly shows that student activities are in line with what is expected and shows an increase in the quality of student activities starting from the first meeting in the first cycle to the second cycle II meeting. The average percentage of student activity in the first cycle of the first meeting was 70.00% in good category and in the second meeting got a good category with an average percentage of 75.00%. Whereas in the second cycle of the first meeting the percentage was 85.00% with a very good category and at the second meeting got a very good category with an average percentage of being 90.00%.

Based on the results of mathematics learning students obtained data on the initial score taken from the scores of the first semester Mathematics exam students before the application of the Jarimatikaini method

was 59.62 then the cycle I daily test increased by 13.63 to 73.42 with an increase percentage of 22.80% , the number of students who complete is 13 people and students who are not complete 6 people. Furthermore, in the second cycle daily replication, it increased by 21.53 to 81.32 with a percentage increase of 36.00%, the number of students who completed as many as 17 people and students who did not complete 2 people. So that classical completeness in the first cycle reached 68.42% and in the second cycle classical completeness increased to 89.47%. Minimum Completeness Criteria that has been set for classical completeness is 85%. This means that if more than 85% of students get grades above KKM 70, the completeness of student learning outcomes classically is declared complete.

#### **4. CONCLUSION AND RECOMENDATION**

Based on the results of the study and discussion it can be concluded that the application of the Jarimatika method can improve the results of third grade elementary school mathematics learning. This can be seen from the findings of the researchers as below:

1. Teacher activity has increased. At the first meeting of the first cycle the percentage of teacher activity was 70.00% in the good category, at the second meeting of the first cycle it increased to 75.00% in the good category. Then in the first meeting of the second cycle increased to 85.00% with a very good category and the second meeting of the second cycle

increased to 95.00% with a very good category.

2. Student activity has also increased. At the first meeting of the first cycle the percentage of student activity was 70.00% with good categories, and at the second meeting of the first cycle it increased to 75.00% with good categories. Then in the first meeting of the second cycle increased to 85.00% and at the second meeting of the second cycle increased to 90.00% with a very good category.
3. Improved mathematics learning outcomes of third grade students of SDN 102 Pekanbaru, namely from the base score of 59.62 increased in the first cycle to 73.33 with a percentage increase of 23.00%, increased again in the second cycle to 81.19 with an increase percentage of 36.18 % .

Researchers also proposed several recommendations relating to the application of the Jarimatika method in mathematics learning, namely:

1. For teachers this research is expected to be a new alternative to improve Mathematics learning activities.
2. For schools This research can be used as a source of information in order to improve the quality of school education, especially in Mathematics learning.
3. For further researchers, the results of this research should be useful as a basis for further research and developing the Jarimatika method.

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